

BookletChartTM

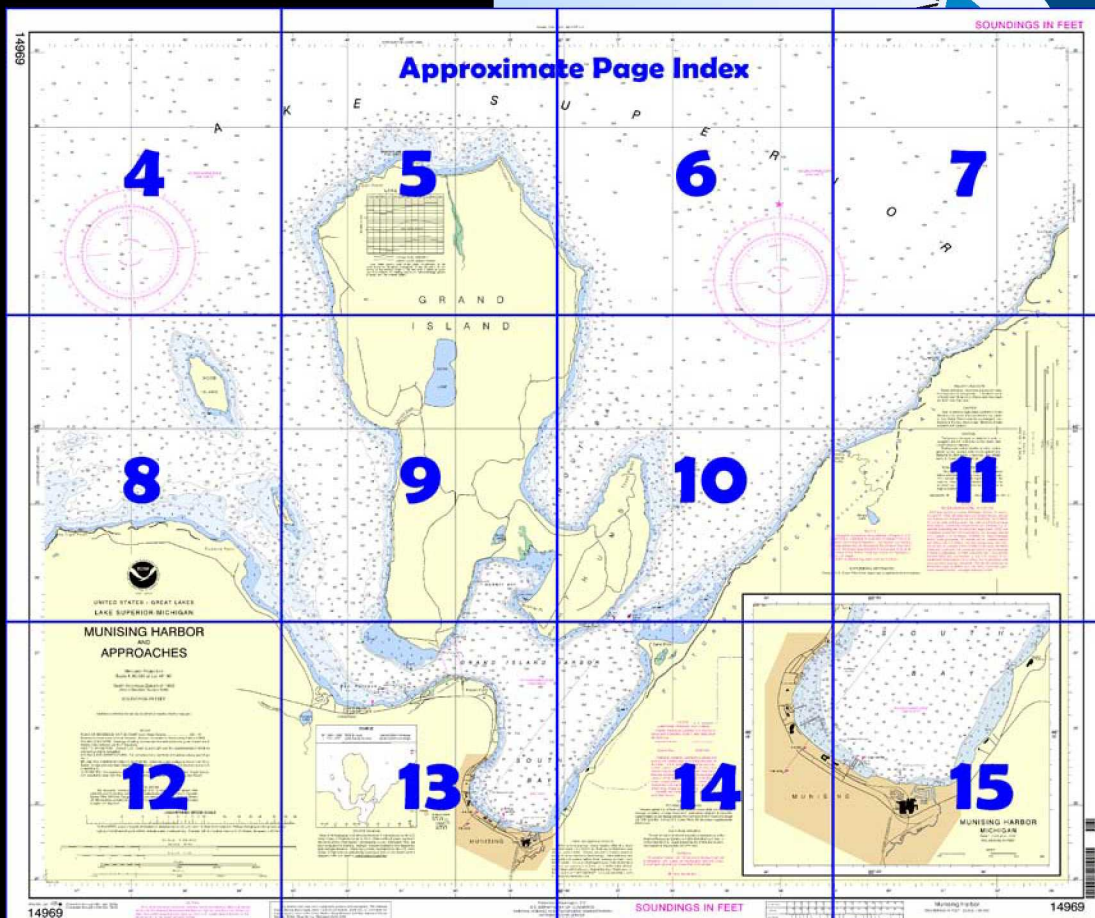
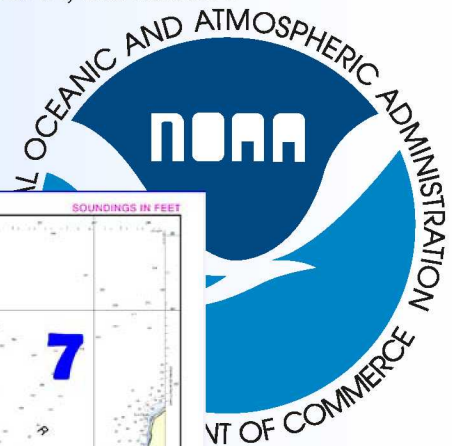
Munising Harbor and Approaches

(NOAA Chart 14969)

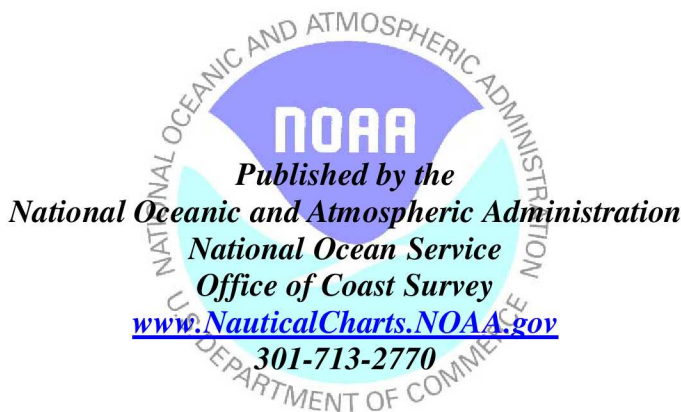


A reduced scale NOAA nautical chart for small boaters. When possible, use the full size NOAA chart for navigation.

- ✓ Complete, reduced scale nautical chart
- ✓ Print at home for free
- ✓ Convenient size
- ✓ Up to date with all Notices to Mariners
- ✓ United States Coast Pilot excerpts
- ✓ Compiled by NOAA, the nation's chartmaker.



Home Edition (not for sale)



What are Nautical Charts?

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

What is a BookletChart™?

This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at <http://www.NauticalCharts.NOAA.gov>.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

Notice to Mariners Correction Status

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.



[Coast Pilot 6, Chapter 13 excerpts]

(87) From Grand Portal Point, the shore trends SW for 9.7 miles to **Sand Point**. The cliffs of Pictured Rocks extend along the first 8 miles of this stretch. **Sail Rock** and **Miners Castle Point**, 1 and 6 miles SW of Grand Portal Point, respectively, are prominent. S of Pictured Rocks, a high wooded bluff continues close to shore past Sand Point. Shoals extend about 0.3 mile offshore in this stretch. About 2.2 miles SW of Miners Castle Point, a shoal with a least depth of ½ foot

makes out from shore and extends SW to a point 0.3 mile NW of Sand Point. The shoal is marked by a lighted bell buoy.

(88) **Grand Island**, about 7.5 miles long and 3.5 miles wide, is a high wooded island W of this reach. The N end is 9 miles W of Grand Portal Point, and the SE end is 0.7 mile W of Sand Point. **Grand Island Light** (46°33.7'N., 86°40.9'W.), 190 feet above the water, is shown from a

white post on the NW point of the island. Shoals extend about 0.5 mile off the two points at the N end of the island, and a shoal with depths of 2 to 6 feet extends 0.5 mile S and SW from the S point of the island. A buoy marks the SW edge and the S edge of the shoal at the S end of the island. Shoals extend no more than 0.3 mile off the E and W shores of the main body of the island.

(89) The **Thumb**, the SE part of Grand Island, is high and roughly oval in shape, about 3 miles long and 1 mile wide. The Thumb is connected to the SE side of Grand Island by a low narrow neck of land, with bays formed on either side between the Thumb and the island. **Trout Bay** is N of the neck, and **Murray Bay** is S. An abandoned lighthouse is on the SE side of the Thumb.

(90) A shoal with depths of 10 to 18 feet extends 0.6 mile N from **Trout Point**, the N point of the Thumb. A shoal, with a depth of 8 feet at the outer edge and marked by a lighted bell buoy, extends 0.5 mile E from shore just SE of Trout Point. The shoal border for the remainder of the E side of the Thumb is narrow and is marked by a buoy opposite Sand Point.

(92) **Grand Island Harbor**, the area of deep water off the S end of Grand Island, is a refuge during N storms for the largest vessels plying the Great Lakes. Anchorage with good holding ground is in the mouth of Murray Bay, between the S point of Grand Island and **Wick Point**, the S point of the Thumb. Avoid the submerged cables that extend from Powell Point to the S end of Grand Island.

(93) **South Bay**, between Sand Point on the E and **Powell Point** on the W, extends 2.5 miles S from Grand Island Harbor. Shoals extend about 0.2 mile from the shores of the bay.

(94) **Munising Harbor** is at the S end of South Bay at the town of **Munising, Mich.** Prominent are the lighted radio masts on the high ground W of the town and the black stack and silver tank at the Kimberly-Clark Corp. on the SE side of the town. A hospital is in the town. A 217° lighted range in the town marks the harbor approach. **Anna River**, which flows into the SE corner of South Bay, is not navigable by even small craft.

(95) **Munising Coast Guard Station**, operated on weekends during the boating season, is in the town of Munising at the front range light.

(98) The L-shaped city dock is 0.6 mile W of the mouth of Anna River. The dock has depths of 14 to 21 feet along the outer face and depths greater than 6 feet along the remainder of the outer half. Facilities developed by the Michigan State Waterways Commission are at the dock. Transient berths, electricity, and sewage pump-out facilities are available. Fuel is available by tank truck and some repairs are available from local garages. A launching ramp is 0.6 mile NW of the dock. The ruins of a large dock are 0.4 mile NW of the city dock.

(99) From Powell Point, on the W side of the entrance to South Bay, the shore trends SW for 1.5 miles, thence NW for 3 miles to **Fivemile Point**, and thence W for 2.5 miles to **Au Train Point**. **Bay Furnace** is the bight formed W of Powell Point. From a width of 0.2 mile in Bay Furnace, the shoal border increases to a width of 1.2 miles NE of Fivemile Point.

Williams Island is near the outer edge of the shoals NE of Fivemile Point. **Wood Island**, surrounded by shoals, is 2 miles N of Fivemile Point. A deep passage, obstructed by several detached 20- to 24-foot spots, leads between Wood and Williams Islands. Shoals extend 0.9 mile N of Au Train Point, and a detached shoal with a least depth of 10 feet is 1.3 miles N of the point.

(100) The W approach to Grand Island Harbor, S through the deep water between Williams Island and Grand Island, is marked by a light on the S shore of Bay Furnace. The shoal that extends from the S end of Grand Island is marked by buoys.

Table of Selected Chart Notes

Pump-out facilities

Corrected through NM Apr. 30/05
Corrected through LNM Apr. 19/05

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:



Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio station listed below provides continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Marquette, MI KIG-66 162.55 MHz (Chan. WX-1)

Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot 6 for details.

PRINT-ON-DEMAND CHARTS

NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, <http://NauticalCharts.gov>, help@NauticalCharts.gov, or OceanGrafix at 1-877-56CHART, <http://OceanGrafix.com>, or help@OceanGrafix.com.

NOTE Z

NO-DISCHARGE ZONE, 40 CFR 140

Michigan waters of Lakes Michigan, Huron, Superior, Erie and St. Clair, all waterways connected thereto, and all inland lakes are designated as a No-Discharge Zone (NDZ). This chart falls entirely within the limits of a No-Discharge Zone (NDZ). Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. Commercial vessel sewage shall include graywater. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/vessel_sewage/vsdnozone.html.

CAUTION

POTABLE WATER INTAKE

Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U.S. Coast Pilot 6 for important supplemental information.

Additional information can be obtained at nauticalcharts.noaa.gov.

SOURCE DIAGRAM

Most of the hydrography identified by the letter "J" was surveyed by the U.S. Army Corps of Engineers prior to 1974. Other outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels currently maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 6 for important supplemental information.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum 1983 (NAD 83) and for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1902 must be corrected an average of 0.471" southward and 0.764" westward to agree with this chart.

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner.

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1

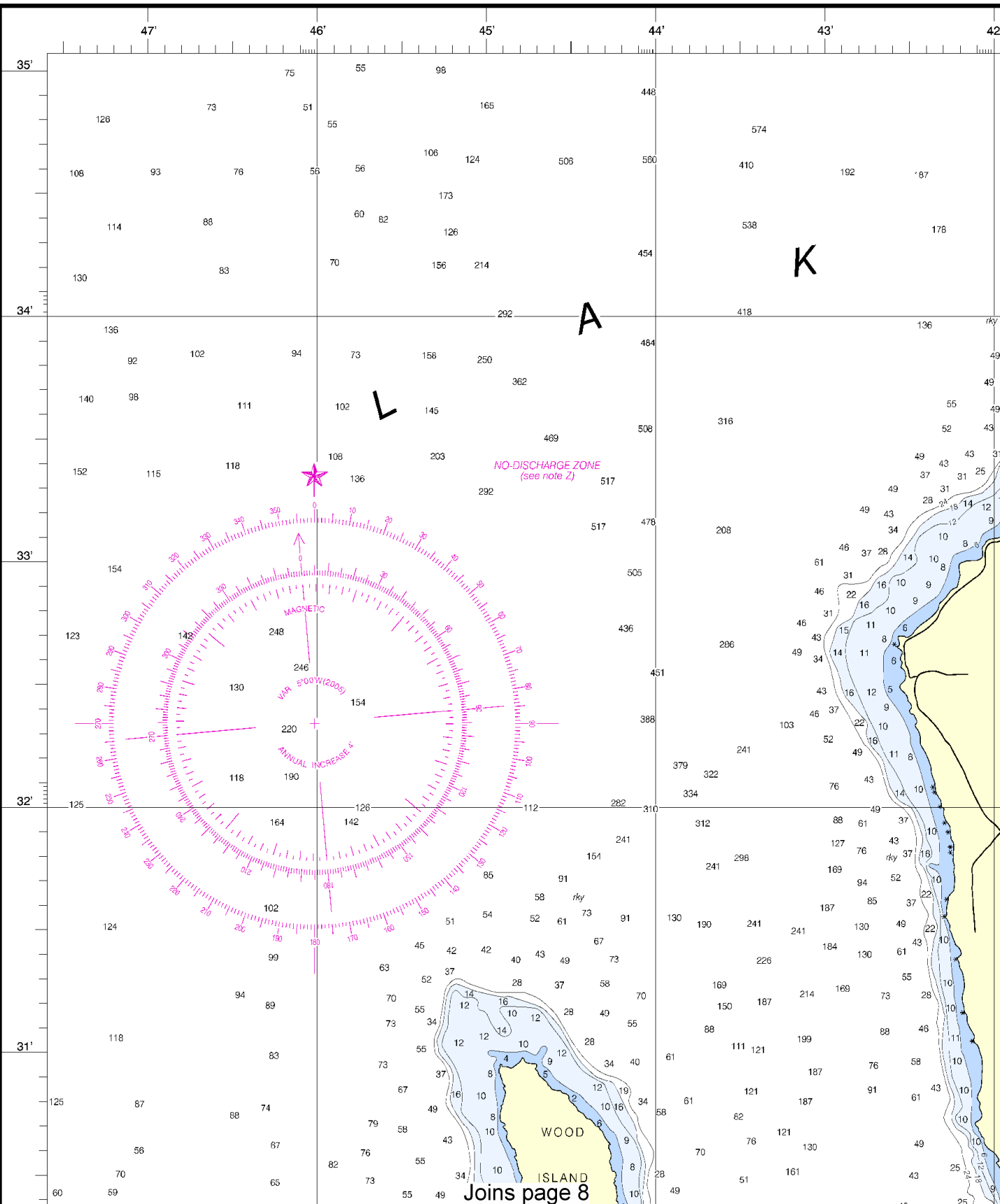
AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard.

SAILING DIRECTIONS. Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

PLANE OF REFERENCE OF THIS CHART (Low Water Datum).....601.1 ft.
Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).

14969



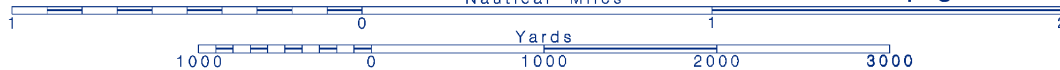
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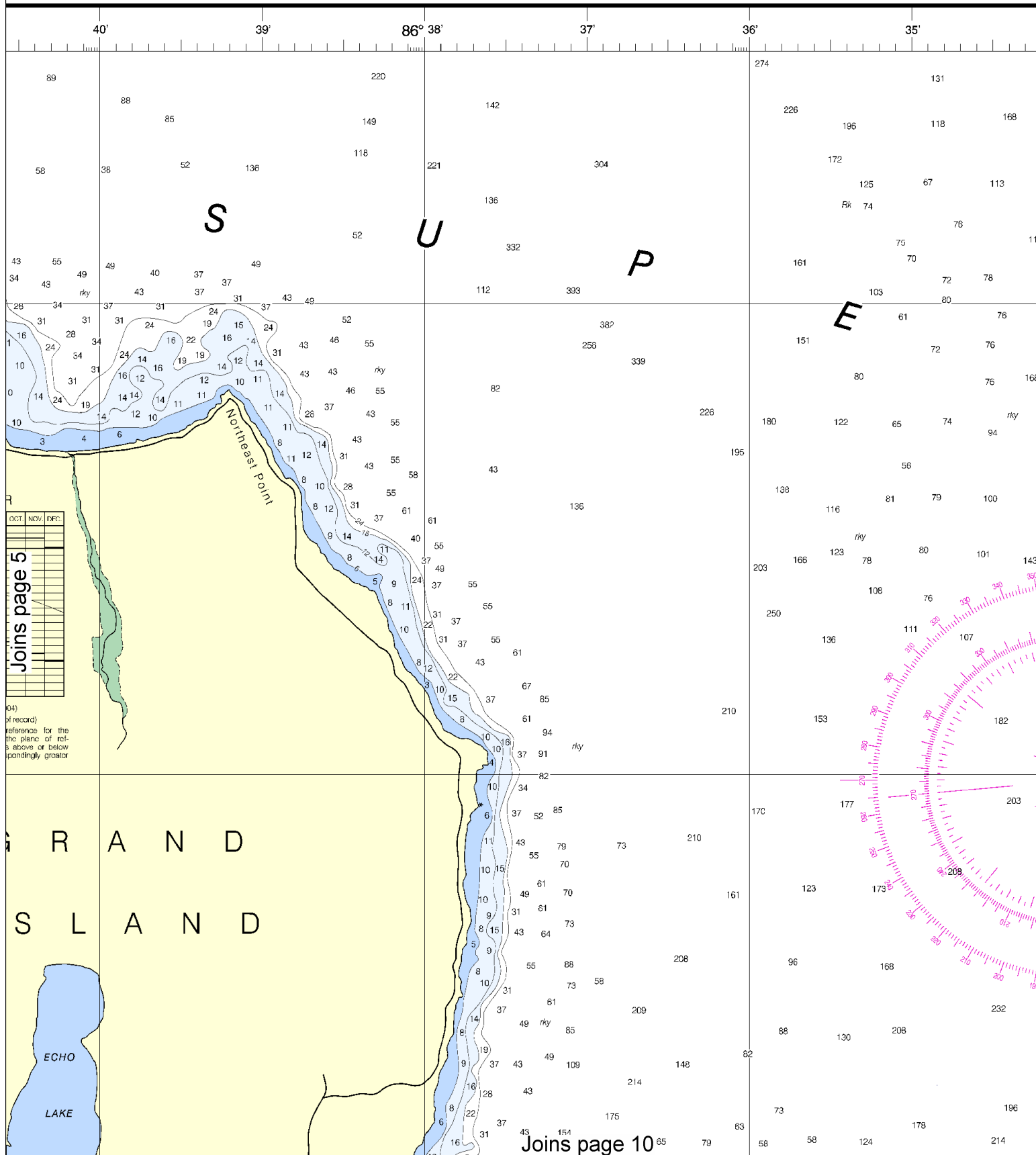
Printed at reduced scale.

SCALE 1:30,000
Nautical Miles

See Note on page 5.



This BookletChart was reduced to 75% of the original chart scale. The new scale is 1:40000. Barscales have also been reduced and are accurate when used to measure distances in this BookletChart.



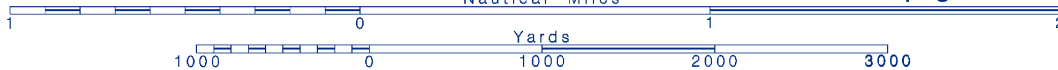
6



Printed at reduced scale.

SCALE 1:30,000
Nautical Miles

See Note on page 5.



[illegible]

7

Joins page 4

32'

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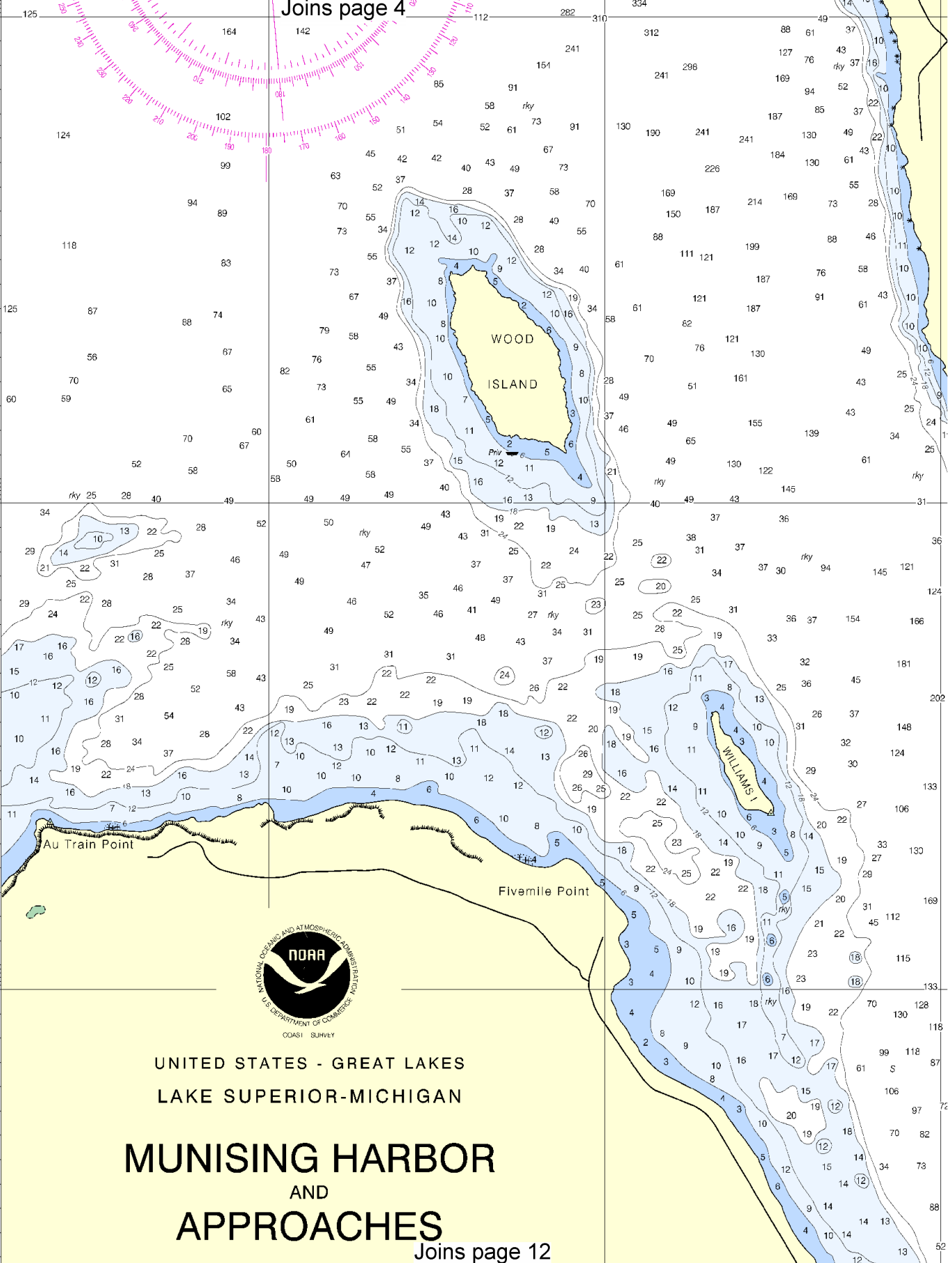
30'

29'

28'

27'

CONTINUED ON CHART 14963



Joins page 12

8

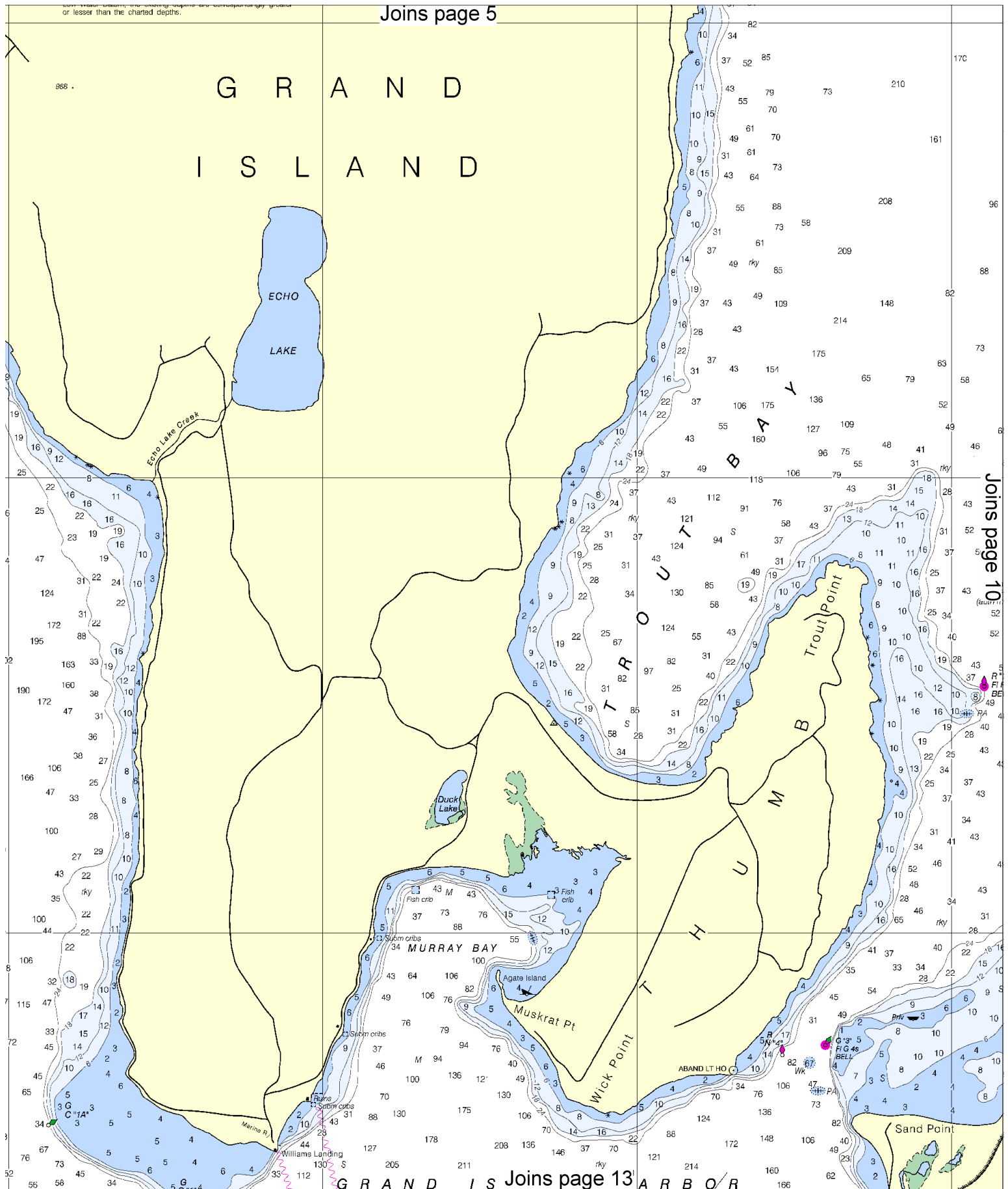


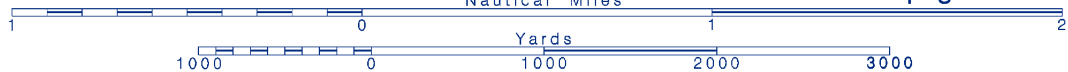
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SCALE 1:30,000
Nautical Miles

See Note on page 5.







Joins page 8



UNITED STATES - GREAT LAKES
LAKE SUPERIOR-MICHIGAN

MUNISING HARBOR AND APPROACHES

Mercator Projection
Scale 1:30,000 at Lat 46° 30'

North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET

Additional information can be obtained at nauticalcharts.noaa.gov.

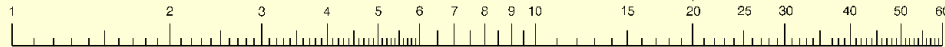
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AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.
SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1
BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.
AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard.

HORIZONTAL DATUM

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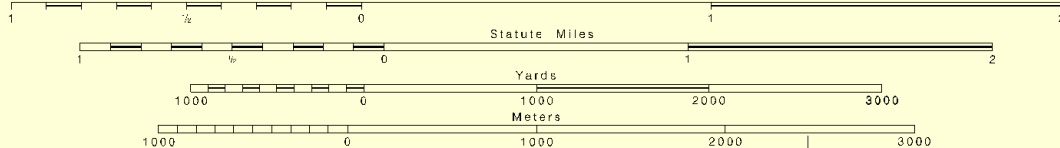
LOGARITHMIC SPEED SCALE



To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots.

SCALE 1:30,000

Nautical Miles



B1 1990 - 1998 NO
J Pre - 1974 Lak

Most of the hydrograph Army Corps of Engineers the limits of the most n been evaluated for chart date and type of survey. Corps of Engineers are diagram. Refer to Chapter

22nd Ed., Apr. /05 ■ Corrected through NM Apr. 30/05
Corrected through LNM Apr. 19/05

14969

CAUTION

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This nautical chart has been designed to promote the Ocean Service encourages users to submit corrections. Improving this chart to the Chief, Marine Chart Division Service, NOAA, Silver Spring, Maryland 20910-3282.

12

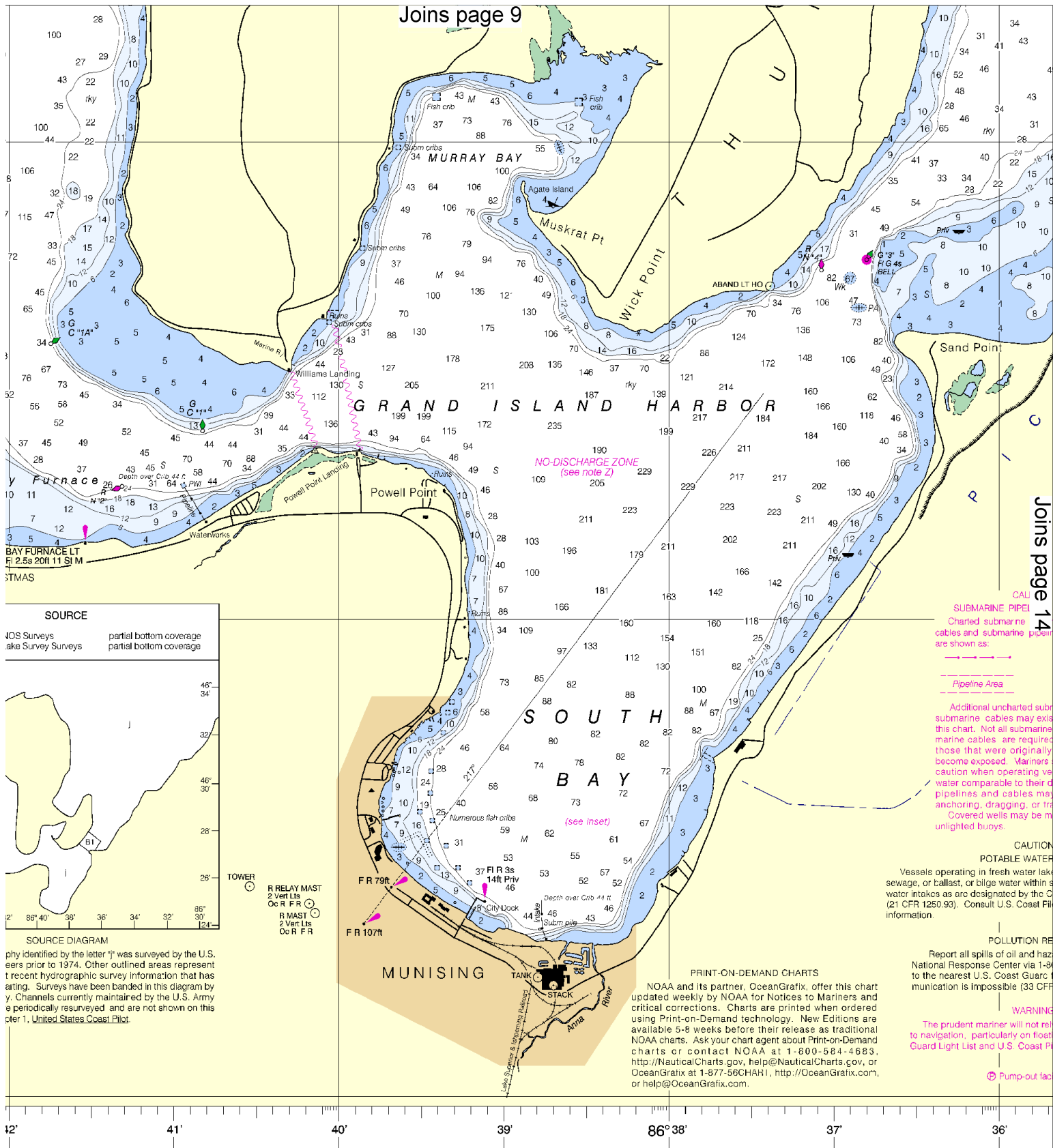


Printed at reduced scale.

SCALE 1:30,000
Nautical Miles

See Note on page 5.





SOURCE

IOS Surveys
lake Survey Surveys

partial bottom coverage
partial bottom coverage

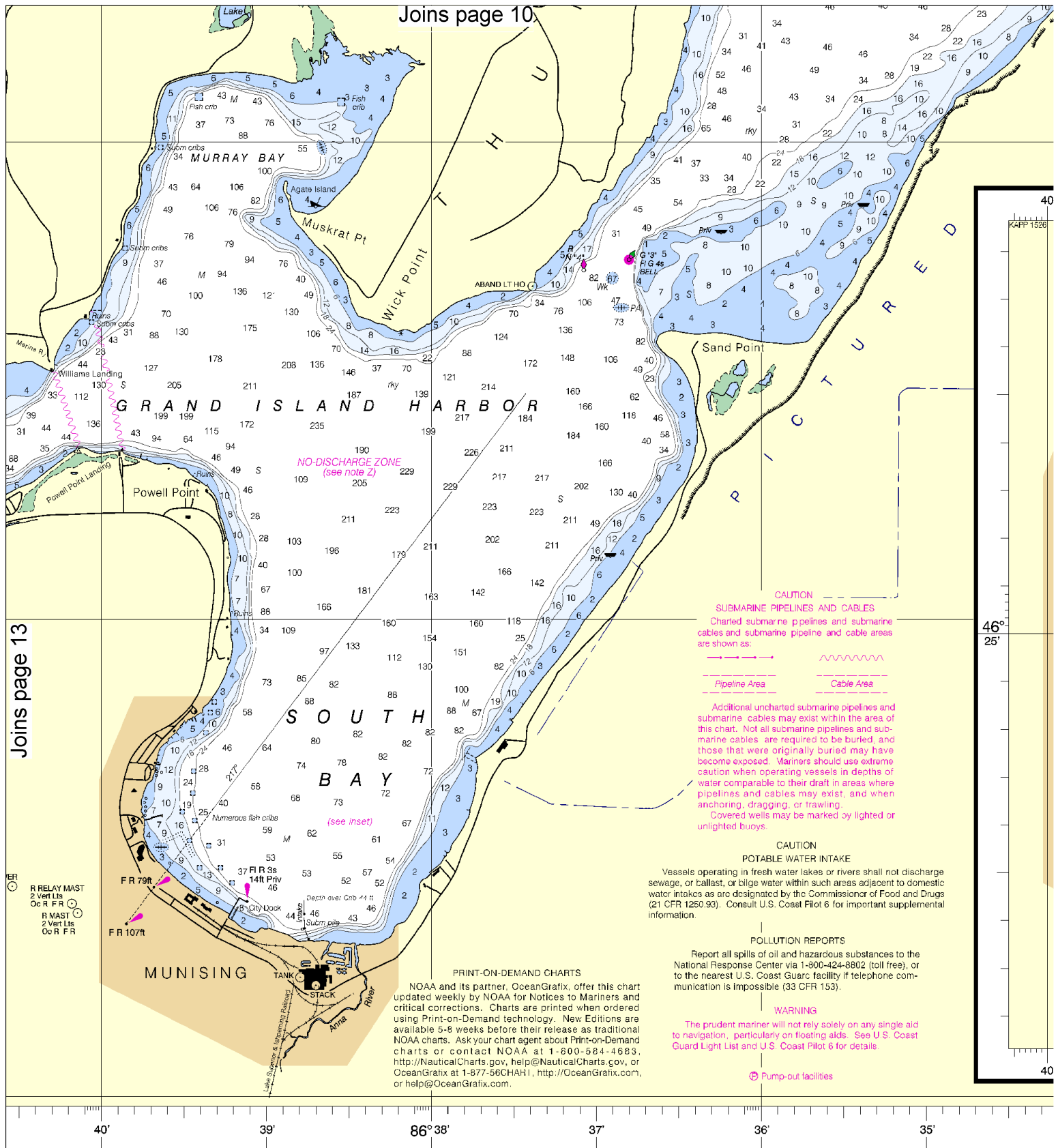
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Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

SOUNDING



Joins page 13

Joins page 10

R RELAY MAST
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R MAST
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Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

SOUNDINGS IN FEET

14



See Note on page 5.

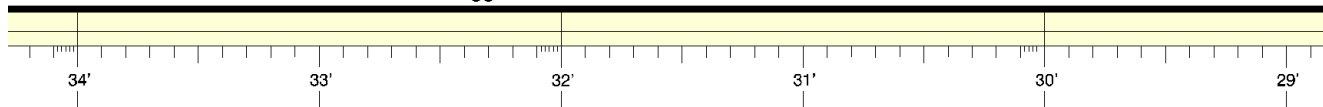
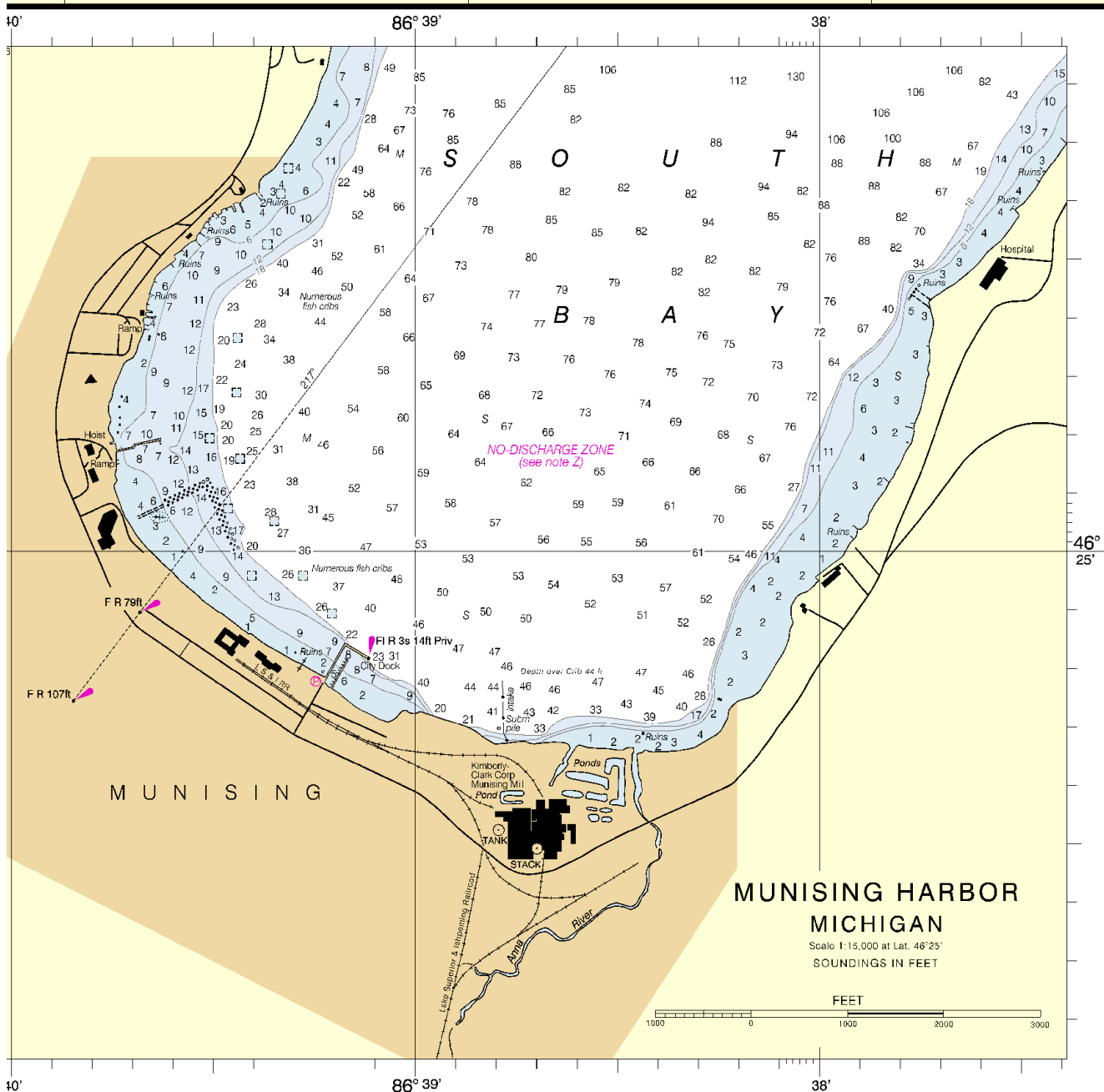
Coast Pilot 6. Additions or revisions to Chapter 1, Section 1, Subsection 1, Paragraph 1, Sentence 1, shall be published in the Notice to Mariners. Information regarding the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Detroit, Michigan.
Refer to charted regulation section numbers.

Joins page 11

include graywater. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/vessel_sewage/vsdnozone.html.

SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 6 for important supplemental information.



FATHOMS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FEET	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102
METERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Munising Harbor
SOUNDINGS IN FEET - SCALE 1:30,000

14969

ED NO 22
NSN 7642014010710
NGA REFERENCE NO. 14XHA14969

EMERGENCY INFORMATION

VHF Marine Radio channels for use on the waterways:

Channel 6 – Inter-ship safety communications.

Channel 9 – Communications between boats and ship-to-coast.

Channel 13 – Navigation purposes at bridges, locks, and harbors.

Channel 16 – Emergency, distress and safety calls to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.

Channel 22A – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.

Channels 68, 69, 71, 72 & 78A – Recreational boat channels.

Distress Call Procedures

1. Make sure radio is on.
2. Select Channel 16.
3. Press/Hold the transmit button.
4. Clearly say: "MAYDAY, MAYDAY, MAYDAY."
5. Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
6. Release transmit button.
7. Wait for 10 seconds – If no response Repeat MAYDAY Call.

HAVE ALL PERSONS PUT ON LIFE JACKETS !!

Mobile Phones – Call 911 for water rescue.

Coast Guard Search & Rescue (RCC) – 216-902-6117

Coast Guard S & R (Sault Ste Marie) – 906-635-3230

NOAA Weather Radio – 162.400 MHz, 162.425 MHz, 162.450 MHz, 162.475 MHz, 162.500 MHz, 162.525 MHz, 162.550 MHz.

Getting and Giving Help – Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.



NOAA CHARTING PUBLICATIONS

Official NOAA Nautical Charts – NOAA surveys and charts the national and territorial waters of the U.S, including the Great Lakes. We produce over 1,000 traditional nautical charts covering 3.4 million square nautical miles. Carriage of official NOAA charts is mandatory on the commercial ships that carry our commerce. They are used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters. NOAA charts are available from official chart agents listed at: www.NauticalCharts.NOAA.gov.

Official Print-on-Demand Nautical Charts – These full-scale NOAA charts are updated weekly by NOAA for all Notice to Mariner corrections. They have additional information added in the margin to supplement the chart. Print-on-Demand charts meet all federal chart carriage regulations for charts and updating. Produced under a public/private partnership between NOAA and OceanGrafix, LLC, suppliers of these premium charts are listed at www.OceanGrafix.com.

Official Electronic Navigational Charts (NOAA ENC[®]) – ENCs are digital files of each chart's features and their attributes for use in computer-based navigation systems. ENCs comply with standards of the International Hydrographic Organization. ENCs and their updates are available for free from NOAA at www.NauticalCharts.NOAA.gov.

Official Raster Navigational Charts (NOAA RNC[™]) – RNCs are geo-referenced digital pictures of NOAA's charts that are suitable for use in computer-based navigation systems. RNCs comply with standards of the International Hydrographic Organization. RNCs and their updates are available for free from NOAA at www.NauticalCharts.NOAA.gov.

Official BookletCharts[™] – BookletCharts[™] are reduced scale NOAA charts organized in page-sized pieces. The "Home Edition" can be downloaded from NOAA for free and printed. The Internet address is www.NauticalCharts.gov/bookletcharts.

Official PocketCharts[™] – PocketCharts[™] are for beginning recreational boaters to use for planning and locating, but not for real navigation. Measuring a convenient 13" by 19", they have a 1/3 scale chart on one side, and safety, boating, and educational information on the reverse. They can be purchased at retail outlets and on the Internet.

Official U.S. Coast Pilot[®] – The Coast Pilots are 9 text volumes containing information important to navigators such as channel descriptions, port facilities, anchorages, bridge and cable clearances, currents, prominent features, weather, dangers, and Federal Regulations. They supplement the charts and are available from NOAA chart agents or may be downloaded for free at www.NauticalCharts.NOAA.gov.

Official On-Line Chart Viewer – All NOAA nautical charts are viewable here on-line using any Internet browser. Each chart is up-to-date with the most recent Notices to Mariners. Use these on-line charts as a ready reference or planning tool. The Internet address is www.NauticalCharts.gov/viewer.

Official Nautical Chart Catalogs – Large format, regional catalogs are available for free from official chart agents. Page size, state catalogs are posted on the Internet and can be printed at home for free. Go to <http://NauticalCharts.NOAA.gov/mcd/ccatalogs.htm>.

Internet Sites: www.NauticalCharts.NOAA.gov, www.NOAA.gov, www.TidesandCurrents.NOAA.gov, www.NOS.NOAA.gov.